



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/627,597	07/28/2003	Ruey-Yau Tzong	MR2349-954	4256
4586	7590	05/18/2005	EXAMINER	
ROSENBERG, KLEIN & LEE 3458 ELLICOTT CENTER DRIVE-SUITE 101 ELLICOTT CITY, MD 21043			QI, ZHI QIANG	
			ART UNIT	PAPER NUMBER
			2871	

DATE MAILED: 05/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

(A)

Office Action Summary	Application No.	Applicant(s)	
	10/627,597	TZONG ET AL.	
	Examiner	Art Unit	
	Mike Qi	2871	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 9-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-8 is/are rejected.
- 7) ☒ Claim(s) 2 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Claims 9-14 have been withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected claims, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on Mar.11, 2005.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1,3-4 and 6-8 are rejected under 35 U.S.C. 102(e) as being anticipated by applicant's admitted prior art (AAPA).

Claims 1 and 3, AAPA discloses (paragraph 0005; Fig. 2) that a liquid crystal projection device using a ferroelectric liquid crystal (FLC) modulator comprising:

- a ferroelectric liquid crystal (FLC) panel (40a), (i.e., a FLC modulator) for receiving an incident light beam transmitting along an incident light path (such as incident light path 60a come from the light source 20a to prism 36a and FLC panel 40a), and the incident light beam being modulated into an image light beam by the FLC panel (40a);

Art Unit: 2871

- the image light beam is reflected by the FLC panel (40a) along a reflection light path (such as reflection light path 70a);
- the incident light path which the lights come from the light source (20a) to prism (36a) and to the FLC panel (40a);
- the reflection light path (such as 70a);
- such that the incident light path and the reflection light path are situated at a non-zero angle (the angle would be 90 degree or 180 degree);

(concerning claim 3)

- a light source (20a) for providing light beam;
- an optical lens module (30a) for receiving and projecting the light beam along an incident light path.

Claim 4, AAPA discloses (paragraph 0005; Fig. 2) that a liquid crystal projection device using a ferroelectric liquid crystal (FLC) modulator comprising a projection lens (50a) disposed on the reflection light path (70a) for receiving and projecting the image light beams.

Claim 6, AAPA discloses (paragraph 0005; Fig. 2) that a liquid crystal projection device using a ferroelectric liquid crystal (FLC) modulator wherein the optical lens (optical lens module 30a) has an optical axis in parallel with the incident light path such as a path from the light source (20a) to the prism (36a), i.e., the optical axis and the incident light path are in parallel.

Claim 7, AAPA discloses (paragraph 0005; Fig. 2) that a liquid crystal projection

Art Unit: 2871

device using a ferroelectric liquid crystal (FLC) modulator wherein the optical lens (optical lens module 30a) comprises a color plate (31a), a front lens (32a), an integrator unit (33a), a polarity conversion unit (34a), and a rear lens (35a), which are sequentially disposed along an optical axis for receiving the light beams, as a result, the light beams are modulated into light beams with different wavelengths (different color), and which are uniformed and polarized, because using such optical lens module.

Claim 8, AAPA discloses (paragraph 0005; Fig. 2) that a liquid crystal projection device using a ferroelectric liquid crystal (FLC) modulator having a color plate, i.e., a color filter which must have red, green and blue color region (R/G/B) to form different colors of light.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA as applied to claims 1, 3-4 and 6-8, and further in view of US 6,624,862 B1 (Hayashi et al).

Claim 5, lacking limitation is such that a lens disposed between the FLC modulator and the projection lens for receiving the image light beams from the FLC modulator and projecting the received image light beams to the projection lens.

However, Hayashi discloses (col.6, line 66 – col.7, line 33; Fig.1) that using condenser lens (8) which is disposed between the display panel (12) and the projection optical system (13), and the condenser lens (8) condenses the illumination light on the display panel as incident light, and directs the reflected light from the display panel to the projection optical system as projected light. Such display structure is simple, excellent in efficiency and low cost, because using such condenser lens in such projector display to obtain a high contrast (see col.5, lines 28-32). Therefore, such structure would motivate the skilled in the art to use a lens between the FLC modulator and the projection lens to obtain a high contrast display.

Therefore, it would have been obvious to those skilled in the art at the time the invention was made to arrange a lens between the FLC modulator and the projection lens for receiving the image light beam from the FLC modulator and projecting the received image light beam to the projection lens as claimed in claim 5 for achieving a simplified structure and efficiently using the lights and obtaining a high contrast display.

Allowable Subject Matter

5. Claim 2 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

6. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record neither discloses nor teaches a liquid crystal display

Art Unit: 2871

projection device using a ferroelectric liquid crystal (FLC) modulator comprising various elements as claimed, more specifically, as the following:

the incident light path and the reflection light path are situated at an angle of between 20 and 40 degree as shown in Fig.4 such as the angle θ [claim 2].

The closest references such as AAPA and Hayashi disclose a liquid crystal projection device using ferroelectric liquid crystal modulator. However, the prior art of record do not discloses such specific incident light path and the reflection light path are situated at an angle between 20 and 40 degree as claimed and as shown in Fig.4.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mike Qi whose telephone number is (571) 272-2299.

The examiner can normally be reached on M-T 8:00 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Kim can be reached on (571) 272-2293. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2871

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mike Qi

Mike Qi
Patent Examiner
May 3, 2005